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A new species of *Incestophantes* Tanasevitch, 1992 (Araneae, Linyphiidae) from Ukraine

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Abstract

A new spider species, *Incestophantes australis* **sp. n.** (Linyphiidae), found on the Crimean Peninsula, Ukraine is described and illustrated. It is morphologically closely related to *Incestophantes crucifer* (Menge, 1866), but is easily distinguished by its palpal conformation.

Keywords

Araneae, Linyphiidae, *Incestophantes australis* sp. n., *I. crucifer*, Ukraine

Introduction

The genus *Incestophantes* Tanasevitch, 1992 includes 23 species so far (Platnick 2008). Only *Incestophantes crucifer* (Menge, 1866) has been recorded from the forest zone and in the Carpathian region of the Ukraine (Gnelitsa 2000, 2002; Evtushenko 1993). It has also been mentioned from the Crimean Peninsula (Gnelitsa 2004). Comparison of the Crimean specimens of *Incestophantes crucifer* with those from the Ukraine revealed some morphological differences. It is now thought that the Crimean *Incestophantes* represents an undescribed species, closely related to *Incestophantes crucifer* (Menge, 1866). Therefore, this species is described here as *Incestophantes australis* sp. n. and comparative drawings and a brief re-description of *Incestophantes crucifer* are provided as well.

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Material and methods

Specimens were collected using a hand-held suction sampler. Identification was made with a binocular microscope MBS-10; drawings were made using a camera lucida. The holotype male is deposited in the collection of the Zoological Department of Sumy State Teacher's Training University (SSTTU). All other specimens are deposited in author's private collection (VGC). Abbreviations of the names of palp and epigyne structures follow Hormiga (2000), Saaristo and Tanasevitch (1996), and Thaler et al. (1994): APc – apical part of paracymbium; E – embolus; i – keel of the lamella characteristica; Lch – lamella characteristica; LPc – lateral process of paracymbium; m – membrane; MPc – middle part of paracymbium; Pc – paracymbium; Ph – pit hook; R – radix; St – subtegulum; Su – suprategulum; T – tegulum; TA – terminal apophysis; TA1 – first terminal apophysis; TA2 – second terminal apophysis; Ps – proscapus; DPs – distal part of scape. Other abbreviations in text: Fe – femur; Pt – patella; Mt – metatarsus; Ti – tibia; d – dorsal, p – prolateral, r – retrolateral position of leg spines. All measurements are in millimeters.

Taxonomic part

***Incestophantes australis* sp. n.**

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Figs 1, 2a-c, 3a-d, 4a-d

Material. Holotype. Male, Ukraine, Crimea, **Yalta** Distr., Cape Martjan reserve, 44°30'N 34°15'E: *Quercus pubescens*, *Juniperus excelsa*, *Arbutus andrachne*, *Ruscus ponticus*, *Hedera taurica*, leaf litter, 23.IV.2002, V. Gnelitsa leg. (SSTTU). – *Paratypes* [all found in Crimea, Ukraine]: **Yalta** Distr., Shaitan Merdven rise, 44°25'N 33°51'E: *Quercus pubescens*, *Carpinus betulus*, *C. orientalis*, *Acer*, *Tilia*, *Euonimus verrucosa*, *Juniperus excelsa*, *Cotinus coggygria*, *Ruscus*, *Brachipodium*, *Hedera*, in grass, male, 12.X.2001; foot of Kilse-Burun Mt., 44°24'N 33°50'E, terraced slope, *Pinus pallasiana*, *Juniperus excelsa*, *Quercus pubescens*, *Carpinus orientalis*, *Hedera*, *Ruscus, Clematis*, with *Cotinus coggygria*, in needle litter and in grass, 8 females 4 males, 14.X.2001. **Alushta** Distr., Demerdji Mountain massif, 44°46'N 34°26'E, *Fagus* forest, in leaf litter, male, 17.IV.2002; SSE slope cereals and motley grass meadow, with sparse *Pyrus eleagnifolia, Fraxinus* and *Rosa*, in grass, male, 11.X.2002; meadow, in the grass along the stream, male, 10.X.2002. **Yalta**, Botkin path, E slope, 44°29'N 34°08'E, *Pinus*, *Quercus pubescens*, *Carpinus betulus*, *Swida*, *Ruscus*, *Crataegus*, needle litter, 2 females 1 male, 17.X.2002. **Pheodosia** Distr., Karadag reserve, 44°55'N 35°14'E, NNW slope of Tumanov ravine, *Quercus pubescens*, *Pinus pallasiana*, sparse *Fraxinus* with *Cornus mas*, in litter, 16 females 3 males, 25.IV.2003, 13.X.2003; Svyataya Mt. slope between North pass and Gyaur-Cheshme spring, *Quercus petraea*, *Acer*, *Paliurus spina-christi*, sparse *Fraxinus* with *Cornus mas*, in litter and in grass, male, 20.IV.2003; Syuryu-Kaya

Figure 1. Distribution of *Incestophantes* species in Ukraine: filled star – *I. australis*; filled circle – *I. crucifer*.

Mt. slope, sparse *Quercus pubescens*, *Fraxinus* with *Cornus mas*, in grass, 3 females 3 males, 11.X.2003, all leg. V. Gnelitsa (all preserved in the VGC).

Diagnosis. Male palp: Lamella characteristica 'Lch' beneath the distal spire with a wide, rounded keel 'i' (Fig. 2a,b). Shortened and widened apical part of paracymbium 'Apc' (Fig. 2a) distally truncate, cf. 'Apc' of *I. crucifer* which is elongate and gradually narrows towards the rounded end (Fig. 2d). Paracymbium with elongate lateral process

Table 1. Length of leg segments in male *Incestophantes australis.*

Legs	Femur	Patella	Tibia	Metatarsus	Tarsus
I	1.48	0.32	1.55	1.57	0.92
II	1.34	0.31	1.27	1.34	0.77
III	1.05	0.27	0.84	1.01	0.55
IV	1.41	0.29	1.23	1.40	0.71

Table 2. Length of leg segments in female *Incestophantes australis.*

Legs	Femur	Patella	Tibia	Metatarsus	Tarsus
I	1.43	0.33	1.44	1.41	0.90
II	1.27	0.32	1.16	1.18	0.76
III	1.02	0.28	0.80	0.90	0.55
IV	1.37	0.28	1.18	1.26	0.71

'LPc' (Fig. 2a); first terminal apophysis 'TA1' of the new species (Fig. 2b,c) narrowing towards the end, without parallel sides as in *I. crucifer* (Fig. 2e,f). Thick, long spine on palpal patella gradually tapers to a sharp tip, while this spine in *I. crucifer* distally widens and then tapers to a point.

Female distinguished by the narrower and elongated distal part of the scape 'DPS' (Fig. 3c). Because of considerable variation in the shape of the proscapus 'Ps' (Figs 3a, 4a-d) females are difficult to distinguish.

Description. Male. Total length 2.20; carapace: 1.12 long, 0.91 wide; yellow with thin dark border and median longitudinal stripe; sternum: 0.63 long, 0.62 wide, caudally extended between coxae IV, yellow-gray with slightly darker margin; posterior median eyes 0.6 diameter apart, anterior margin of chelicerae with two medium sized teeth, posterior margin with two tiny teeth at the base of the fang; stridulating files distinct. Abdomen yellow with dorsal pattern of two longitudinal rows of gradually diminishing grey blotches which are drawn together caudally. Legs yellow, femur, tibia and metatarsus all with dark ring, tibia darkened distally; spination: FeI – 1p, TiI – 2d:1p:1r, MtI – 1d; TiII – 2d:1r, MtII – 1d; TiIII – 2d and 2 spines (1p 1r) at the distal end, MtIII – 1d; TiIV – 2d, MtIV – 1d; position of metatarsal trichobothrium: I – 0.19, II – 0.19, III – 0.18.

Palp: see Fig. 2a-c.

Female. General appearance as in the male. Total length 2.75; carapace 1.06 long, 0.81 wide, yellow with dark gray border and median longitudinal stripe; sternum 0.63 long, 0.59 wide, caudally extended between coxae IV, yellow with slightly darker border; posterior median eyes 0.6 diameter apart; anterior margin of chelicerae with three medium sized teeth, posterior margin with four tiny teeth close together; stridulating files indistinct.

Epigyne: see Fig. 3a-c; vulva: see Fig. 3d.

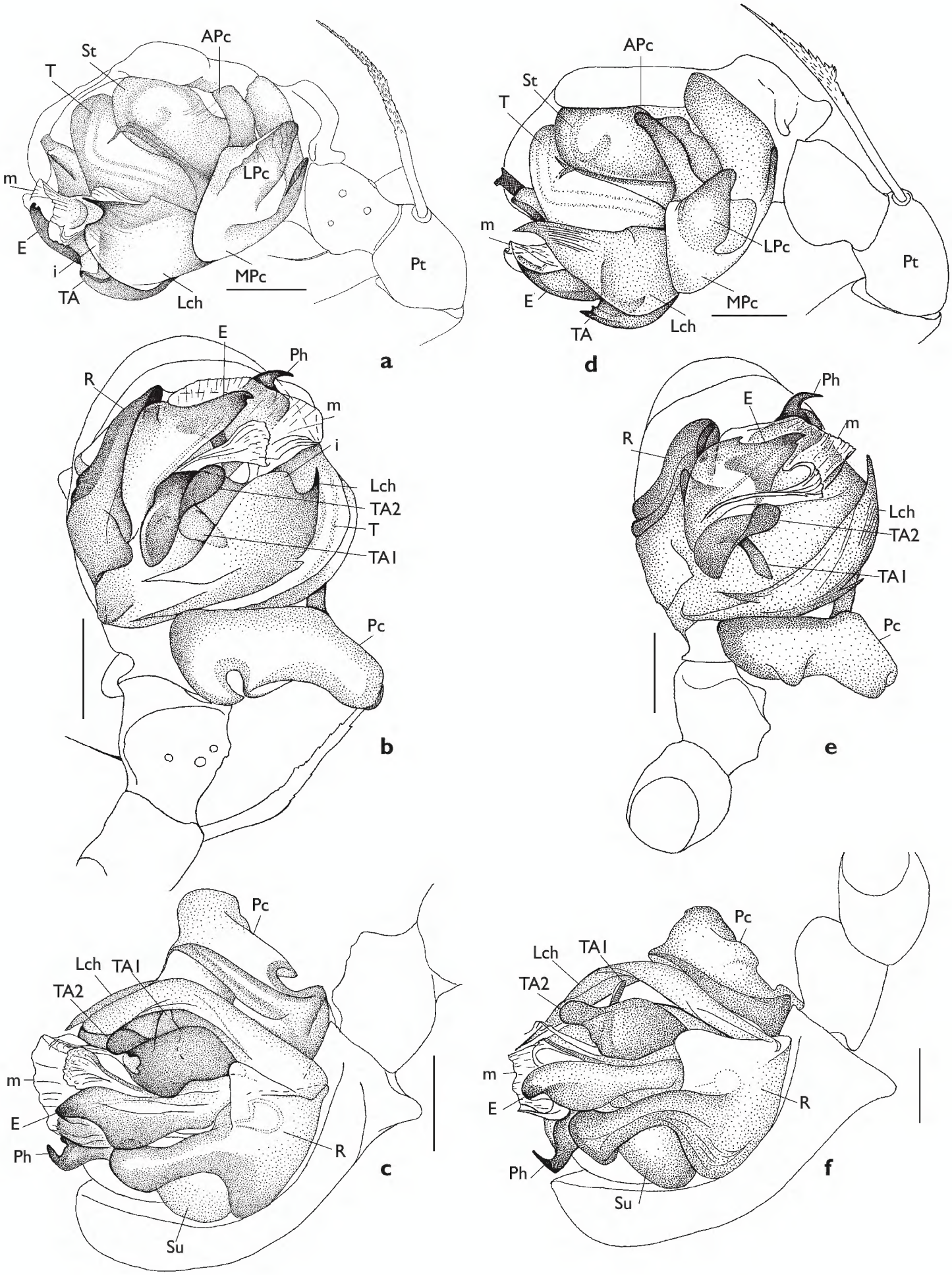

Figure 2. Male palp. *Incestophantes australis* sp. n.: **a** lateral aspect **b** ventral aspect **c** mesal aspect. *I. crucifer*: **d** lateral aspect **e** ventral aspect **f** mesal aspect. Scale bars = 0.1 mm.

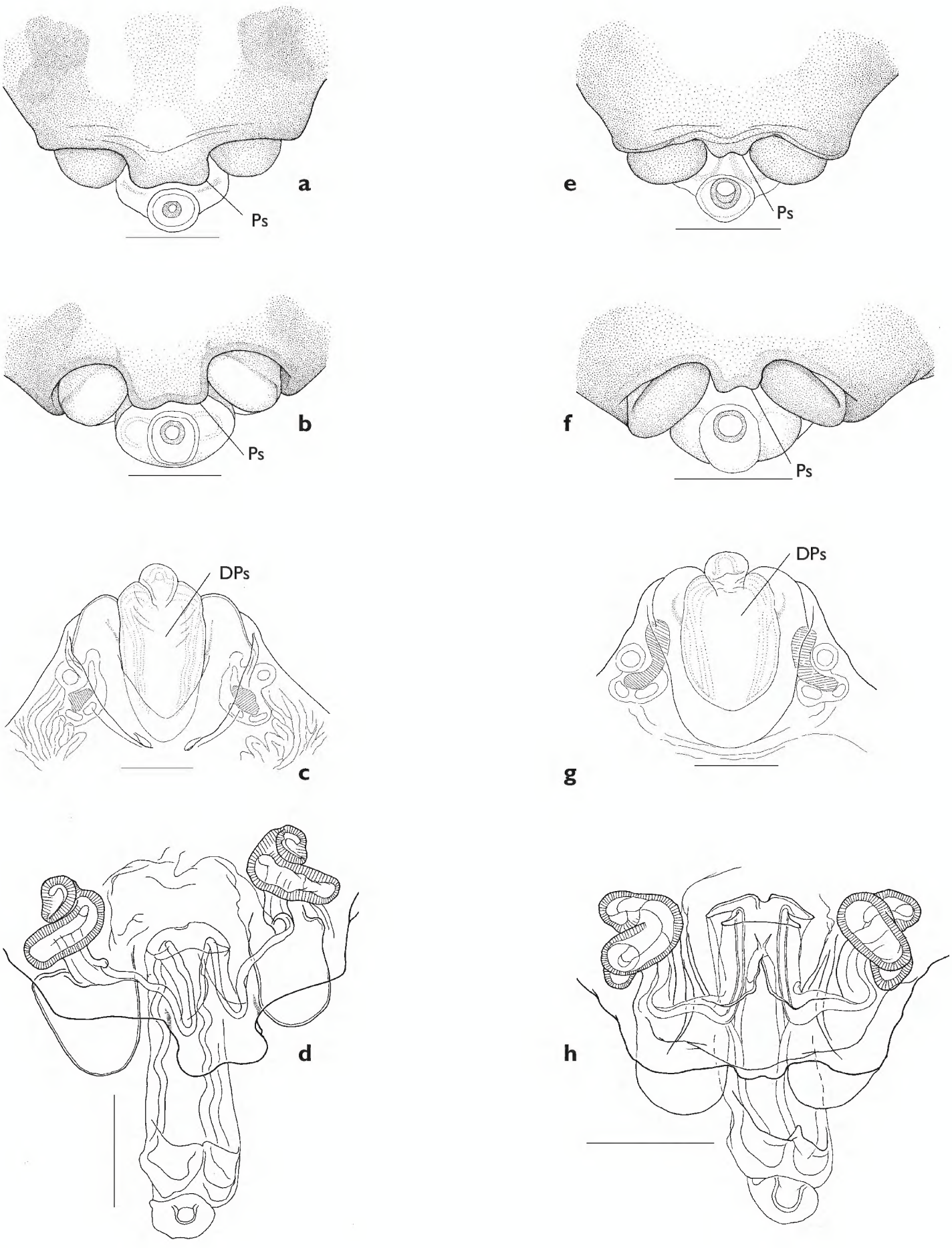

Figure 3. *Incestophantes australis* sp. n., epigyne: **a** ventral aspect **b** caudal aspect **c** dorsal aspect **d** vulva. *I. crucifer*, epigyne: **e** ventral aspect **f** caudal aspect **g** aspect **h** vulva. Scale bars = 0.1 mm.

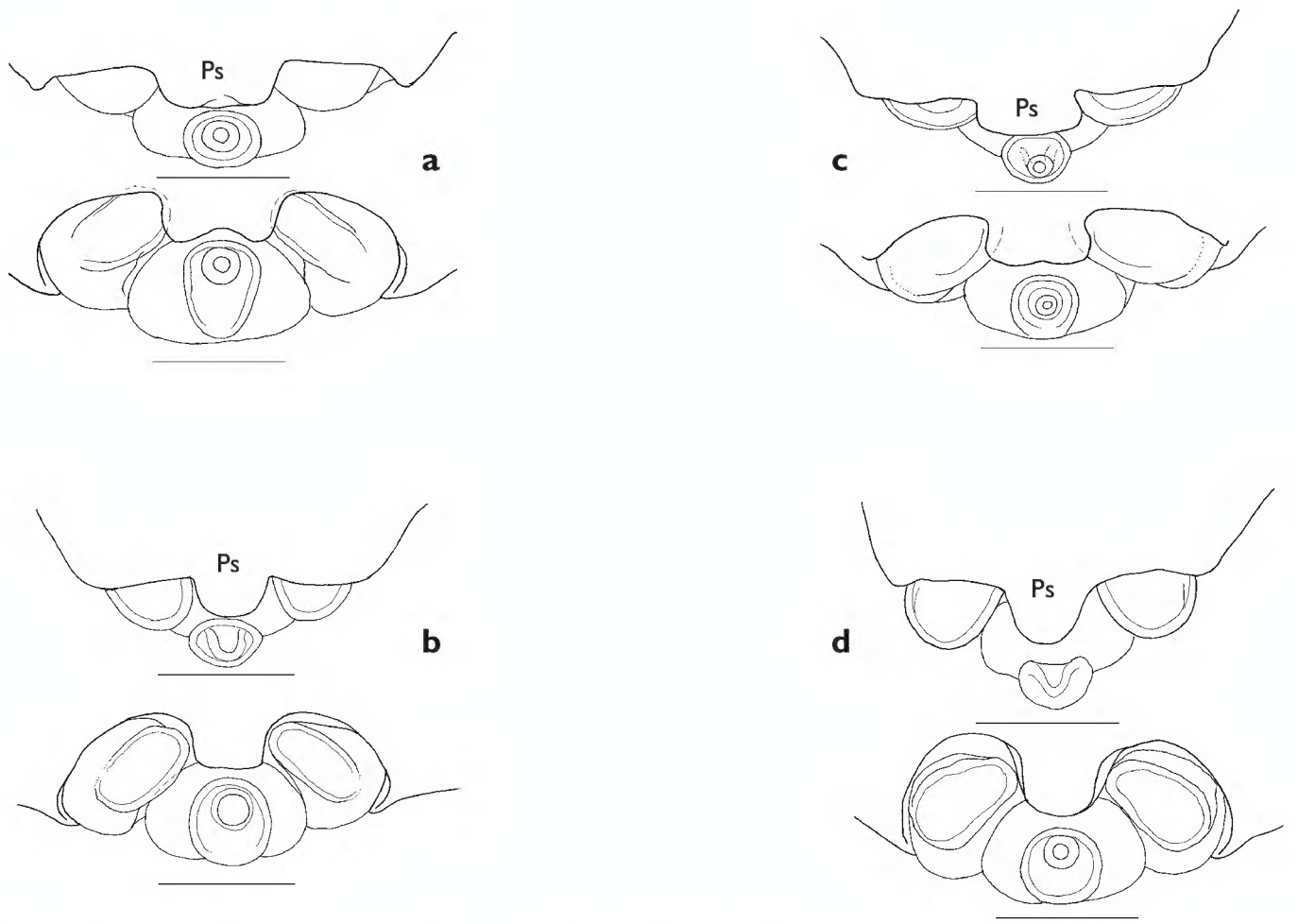

Figure 4. *Incestophantes australis* sp. n., variation of the epigyne (ventral and caudal views) of specimens from a single locality. Scale bars = 0.1 mm.

***Incestophantes crucifer* (Menge, 1866)**

Bathyphantes c. Menge, 1866: fig. 41.
Bolyphantes c.: Wiehle 1956: fig. 268-272; Miller 1971: plate XLIII, figs 7-8; Palmgren 1975: fig. 9.23-24; Pichka 1983: fig. 2.
Lepthyphantes c.: Simon 1884: figs 18-19; Thaler et al. 1994: fig. 30-39.
Incestophantes c.: Saaristo and Tanasevitch 2000: p. 257.
Figs 1, 2d-f, 3e-h

Material. Ukraine: Volyn region, **Shatsk** Distr., Shatsky Nature Park, 51°30'N 23°55'E, *Quercus – Pinus* forest, male, female, IV-X.1990, K. V. Evtushenko leg. (Evtushenko's private collection); Chernovtsy region, **Vyzhnitsa** Distr., Dolishny Shepot environs, 48°01'N 25°16'E, Chiuchelka Mt. slope, *Picea*, in needle litter and in moss on the ground, 3 females, 2.VII.2001; Sumy region, **Konotop** Distr., 2 km to the North of Kuzky village, 51°18'N 33°17'E, *Pinus*, sparse *Quercus*, *Betula*, *Sorbus* with *Frangula*, *Vaccinium myrtillus* and *Calluna vulgaris*, at the base of *Pine* trunk and in litter, 3 females 2 males, 22.V.2003, **Yampol** Distr., Prudishche environs, 51°57'N 33°43'E, *Pinus*, sparse *Sorbus*, at the base of *Pine* trunk, 6 females 1 male, 7.V.2000; **Seredinobuda** Distr., Staraya Guta environs, Desnyansko-Starogutsky Nature Park, 52°19'N 33°46'E, *Pinus*, sparse *Quercus*, *Sorbus* with *Frangula*, at the base of *Pine*

Table 3. Length of leg segments in male *Incestophantes crucifer.*

Legs	Femur	Patella	Tibia	Metatarsus	Tarsus
I	1.19	0.28	1.25	1.26	0.82
II	1.05	0.27	1.02	1.07	0.68
III	0.80	0.22	0.65	0.76	0.48
IV	1.04	0.24	0.98	1.09	0.63

Table 4. Length of leg segments in female *Incestophantes crucifer.*

Legs	Femur	Patella	Tibia	Metatarsus	Tarsus
I	1.05	0.26	0.99	0.97	0.67
II	0.91	0.24	0.81	0.81	0.57
III	0.70	0.22	0.53	0.60	0.39
IV	0.95	0.22	0.78	0.83	0.55

trunk, female, 22.VI.2000; moss, 6 females, 13.V.2001, 5 females, 15.V.2001; *Pinus*, *Betula*, sparse *Quercus*, *Sorbus* with *Frangula* and *Vaccinium myrtillus,* in litter, female, 16.V.2001; *Sphagnum-Eriophorum* bog, on the rising ground in the grass near the base of *Betula* trees, female, 8.V.1990, 2 females, 22.VI.2000, 2 females, 17.IX.2000, 5 females 1 male, 18.IX.2000, all collected by V. Gnelitsa (all preserved in the VGC).

Description. Male. Total length 1.69, carapace: 0.94 long, 0.74 wide, yellow with dark border and median longitudinal stripe; sternum: 0.56 long, 0.55 wide, caudally extended between coxae IV, yellow with slightly darker margin; posterior median eyes 0.6 diameter apart. Anterior margin of chelicerae at the base of the fang with five medium sized teeth and a small one remotely positioned, posterior margin with tiny tooth at the base of fang; stridulating files distinct. Abdomen with dorsal pattern of two longitudinal rows of dark patches on a light background. Legs yellow, femur, tibia and metatarsus all with dark ring, tibia darkened distally; spination: FeI – 1p, TiI – 2d:1p:1r, MtI – 1d; TiII – 2d:1r, MtII – 1d; TiIII – 2d and 2 spines (1p, 1r) at the distal end, MtIII – 1d; TiIV – 2d and 2 spines (1p, 1r) at the distal end, MtIV – 1d; position of metatarsal trichobothrium: I – 0.20, II – 0.19, III – 0.18.

Palp: see Fig. 2d-f.

Female. General appearance as in the male. Total length 2.23; carapace 0.78 long, 0.62 wide, yellow with dark gray border and median longitudinal stripe; sternum 0.49 long, 0.45 wide, caudally extended between coxae IV, yellow-gray with slightly darker border. Posterior median eyes 0.6 diameter apart. Anterior margin of chelicerae with three (two medium sized, one small) teeth, posterior margin with five tiny teeth close together; stridulating files as in male. Position of metatarsal trichobothrium: I – 0.25, II – 0.23, III – 0.20.

Epigyne: see Fig. 3e-g; vulva: see Fig. 3h.

Remarks. *Incestophantes crucifer* is known from Austria, Belarus, Belgium, Bulgaria, the Czech Republic, Estonia, Finland, France, Germany, Hungary, Italy, Liechtenstein, Norway, Poland, Romania, Russia, Slovakia, Sweden, Switzerland, Ukraine

and the former Yugoslavia (Van Helsdingen 2007). The spiders usually inhabit dry coniferous forests as well as bogs. Their webs are spanned in a slanting direction from tree trunks towards the litter.

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